

**In the Specification:**

Please make the following changes to the specification paragraphs below:

**Page 3, lines 12-19:**

Further, the linear transmission rate of a ceramic envelope depends on the surface roughness Ra, and thus, ~~the~~ smaller Ra is advantageous. Although the surface roughness of the interior surface of the ceramic envelope can be controlled by means of polishing, the process becomes complex, which is not rational. In addition, MgO or La<sub>2</sub>O<sub>3</sub> and the like which ~~is~~are weaker with respect to a relevant halide than alumina mixed as an additive, appears on the interior surface by such polishing. Thus, there has been a disadvantage to maintain good electric discharge characteristics.

**COPY**

**Page 6, lines 17-22:**

wherein the barrel section thickness of at least one of the boundary sections between both of the barrel section and closing section is continuously increased at a ratio from 1.2 to 2.0 relevant to the thickness in the vicinity of the center of an electric discharge light emitting space, and a ratio ~~if~~of a diameter in the vicinity of an end of the barrel section to a diameter of the center of the barrel section is equal to or greater than 0.8, and is less than 1.0.

**Page 7, lines 7-16:**

According to a fifth aspect of the present invention, there is provided a ceramic envelope for high intensity discharge lamp as ~~claimed in any of claims 1, 2, and 4~~described above, wherein the surface roughness Ra of the interior surface of the barrel section is from 0.01  $\mu$ m to 0.4  $\mu$ m, and the additive concentration of the surface of said barrel section is  $\frac{1}{2}$  or less of that in the vicinity of the center of the thickness.

According to a sixth aspect of the present invention, there is provided a ceramic envelope for high intensity discharge lamp ~~as claimed in claim 3 or 5~~, wherein an additive consists of at least one or more kinds of  $\text{ScO}_3$ ,  $\text{MgO}$ ,  $\text{ZrO}_2$ ,  $\text{Y}_2\text{O}_3$ , and lanthanoid based rare earth oxide.

**Page 9, lines 17-24:**

These members are separately molded from an alumina-based component, ~~and with~~  $\text{MgO}$  and the like as an additive. Then, the members are formed so as to give light transmission properties by integrally being assembled and ~~burned~~ fired. An example of dimensions of each section is shown here. An outer diameter D1 of the barrel section 1 is 11.6 mm, an inner diameter D2 is 9.4 mm, a length L1 is 19 mm, thickness W of the closing section is 3 mm, and a full length L2 of a light emitting tube is 47 mm. The surface roughness Ra including an interior surface is 0.2  $\mu\text{m}$ .

**Page 10, lines 11-22:**

In this way, by adding the additives, abnormal grain growth of a ~~ceramics~~ ceramic base phase essentially consisting of alumina is restrained, uniform grain growth can be produced, and the linear transmission rate can be increased. However, the surface roughness Ra is ~~preferable~~ preferably within the range of 0.01  $\mu\text{m}$  to 0.4  $\mu\text{m}$  in view of light transmission properties and strength.

In addition, in a ~~burning~~ firing process, the additive in the vicinity of the surface of the ceramic envelope is dispersed or scattered, whereby the surface additive concentration can be  $\frac{1}{2}$  or less as compared with the inside of the thickness. By doing this, the additive concentration of the surface of the ceramic envelope is not increased after ~~burning~~ firing.

Therefore, reaction with halide that is a light emitting substance can be restrained, and the good electric discharge characteristics can be maintained.

**COPY**

**Page 14, lines 9-17:**

By means of a lost wax or by applying a frost molding technique, injection molding technique, or gel casting technique to the lost wax, such integration molding can be easily carried out. By carrying out integral molding, no wedge shaped cavity is formed, and the service life can be extended constantly. In addition, by carrying integral molding, ~~a rate~~ the ratio of a diameter in the vicinity of an end of the barrel section 1 and a diameter in the vicinity of the center can be arbitrarily set. Further, the surface rough Ra of the interior surface of the barrel section can easily achieved to be within 0.01  $\mu\text{m}$  to 0.4  $\mu\text{m}$ .